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YAKOVLEVA, T.B.; PETROV, A.A.; STANDNICHUK, M.D.

Vibration spectra and structure of enin silicon hydrocarbons.
Opt. i spektr. 11 no.5:588-593 N '61. (MIRA 14:10)
(Silicon organic compounds)

AGEKYAN, T.A.; YAKOVLEVA, T.D.

Determining masses of rotating galaxies. Uch.zap.LGU no.328:139-145
'65. (MIRA 18:10)

YAKOVLEVA, Tat'yana Fedorovna; RYSTENKO, Anna Timofeyevna; LAVORKO,
P.K., inzh., retsenzent; RIKBERG, D.B., red.;
GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Brief handbook on electroplating] Kratkii spravochnik po
gal'vanicheskim pokrytiiam. Moskva, Mashgiz, 1963. 269 p.
(MIRA 16:7)

(Electroplating—Handbooks, manuals, etc.)

YAKOVLEVVA, T.G., kand. tekhn. nauk.

Determining the necessary degree of soil compaction in railroad
embankments. Trudy MIIT no.94:3-20 '57. (MIRA 11:5)
(Railroads—Earthwork) (Soil stabilization)

YANOVLEVA, T.G., kand. tèkhn. nauk

Careful maintenance of ditches. Put' i put. khoz. no.8:34-35 Ag '59.
(MIRA 13:3)

(Railroads—Maintenance and repair)

YAKOVLEVA, T.G., kand.tekhn.nauk

Determining the safety zone in planning control measures
against karst formation. Trudy MIIT no.111:150-163 '60.
(MIRA 13:11)

(Railroad engineering) (Karst)

YAKOVLEVA, T.G., kand.tekhn.nauk

Some methods of remedial treatment of the roadbed. Put' i put.khoz.
6 no.3:47 Mr '62. (MIRA 15:3)
(Ballast (Railroads)--Maintenance and repair)

ZAKOLESVA, T.G., kand. tekhn. nauk; IVANOV, D.I.

Machine for centrifuge modeling, its parameters and characteristics.
(MIRA 17:10)
Trudy MIIT no.177:147-164 '63.

FRISHMAN, Moisey Abramovich; KHOKHLOV, Ivan Nikolayevich;
YAKOVLEVA, Tat'yana Terasimovna; SERGEYEVA, A.I., red.

[Railroad roadbed] Zemliane polotno zheleznykh dorog.
Moskva, Transport, 1964. 295 p. (MIRA 18:2)

CHIZHIKOV, P.G., kand. tekhn. nauk; YAKOVLEVA, T.G., kand. tekhn. nauk

Basis prerequisites in the modeling of embankment sagging.
Trudy MIIT no.210:20-27 '65. (MIRA 18:12)

YAKOVLEVA, T.G., kand. tekhn. nauk; IVANOV, D.I.

Centrifugal modeling at the service of railroaders. Put' i put.
khoz, 9 no.10:29-30 '65. (MIRA 18:10)

1. Starshiy inzh. puteispytatel'noy laboratori Moskovskogo
instituta inzhenerov zheleznodorozhного transporta (for Ivanov).

YAKOVLEVA, T.I., kand.teologo-mineralogicheskikh nauk; MALOVA, N.N., inzh.

Determination of coefficients of crushability. Trudy Inst.
ogneup. no.29:173-184 '60. (MIRA 14:12)
(Refractory materials)

YAKOVLEVA, T. I.

Sulfonation reac'ty'd. XXXV. Preparation of toluene-
and trifluorotoluene. A. A. Sushina and T. I. Yakovleva
[Redacted] Khim.
Chem. Technol. Inst. Ivanovo, [Redacted] 46-51/1056 (Engl.
transl.) 1972; J. Can. Chem. Soc. 51, 120-124. — Heating 4 g.
 ρ -MeC₆H₄SO₃Cl with 11.5 ml. diisopropyl sulfide (DISO₂I) in 10 min. to
145° and keeping the mixt. at 145-7° 0.5 hr. gave complete
conversion to the disulfonilyl chloride, m. 62.4-3.8°; longer
heating yields a less pure prod'c' with lower m.p. The
product obtained is pure 2,4-toluenedisulfonyl chloride, ob-
tained in 62% yield after quenching the mixt. in H₂O. The
residual material consists mainly of the sulfonic acids.
The 3rd sulfo-group cannot be introduced even at reflux
with CISO₂H. At 20° the 2,4-isomer is sol. in 100 g. Et₂O
to the extent of 73.6 g. This dichloride (1 g.) with 1 ml.
30-60% oleum in sealed tube 4 hrs. at 180° yields with
CISO₂H 2,4,6-trisulfonatolyl chloride (I), m. 118-6°;
introduction of 24 ml. CISO₂H into mixt. of 0.6 g. dichloride
and 6 ml. 38% oleum and heating again 0.5 hr. at 145-8°
gave 54% trichloride. The trichloride, m. 157-9°, was
also formed on heating 2 g. \sim -MeC₆H₄SO₃Cl with 2 ml. 67%
oleum 4 hrs. at 180°, followed by the above treatment with
CISO₂H. Pure I, m. 162° [from AcOH; cf. Klasen, Ber.
14, 307(1881)] is sol. in hot AcOH, MePh, C₆H₆, CHCl₃,
(CH₂Cl)₂, and CISO₂H. The solv. in Et₂O at 10° is 0.73 g.
per 100 g. soln. G. M. Kosolapoff

SPRYSKOV, A.A.; YAKOVLEVA, T.I.

Study of sulfonation. Part 35. Preparation of toluene di- and trisulfochlorides. Zhur. ob. khim. 25 no.4:783-786 Ap '55. (MIRA 8:?)

1. Ivanovskiy khimiko-tehnologicheskiy institut.
(Toluenesulfochloride) (Sulfonation)

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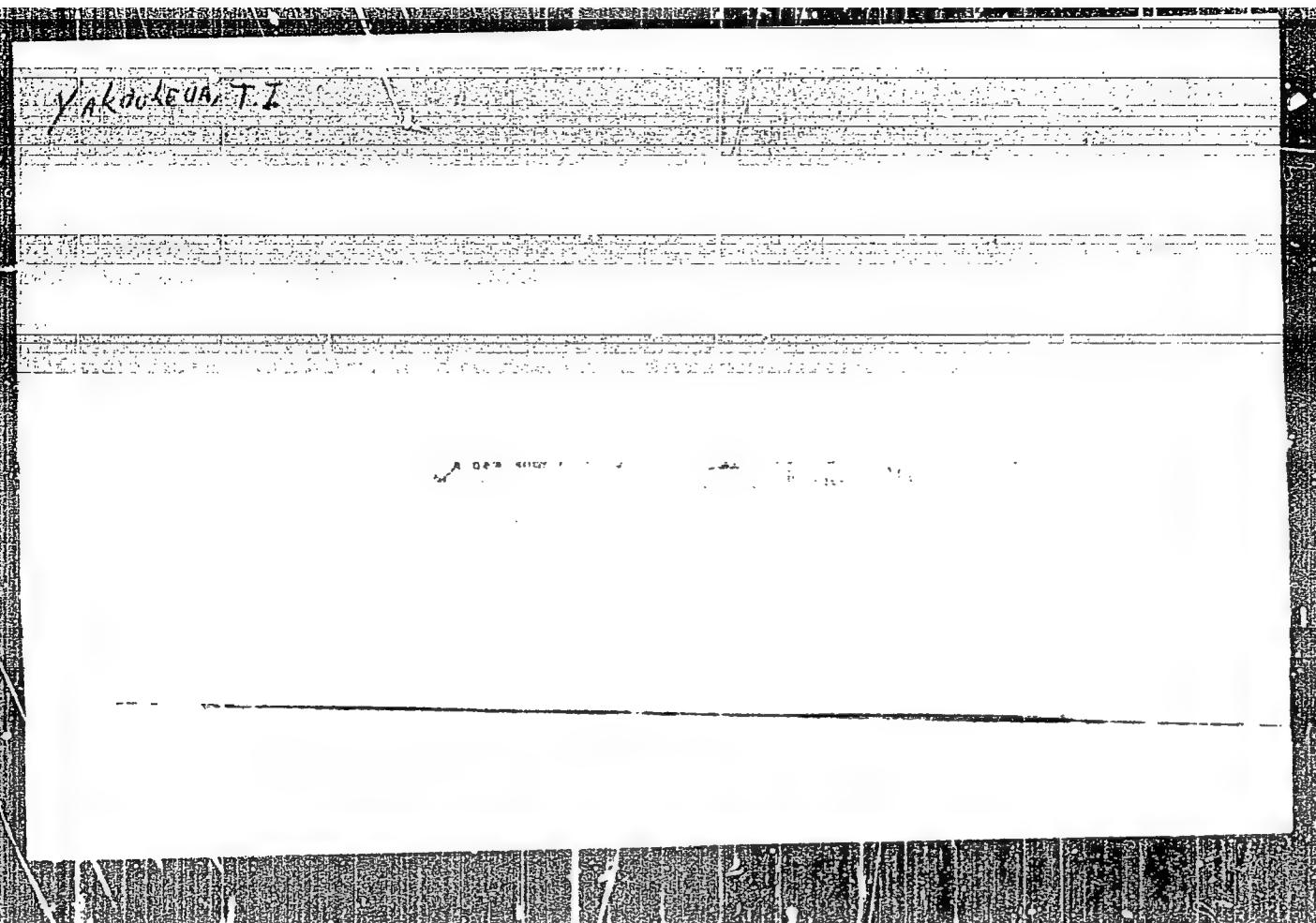
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YAKOVLEVA, T. I.

484

AUTHORS: Spryskov, A. A., and Yakovleva, T. I.

TITLE: Orientation during Displacement in the Aromatic Series. Part 1.
Sulfonation of m-Toluenesulfonic Acid (K oriyentatsii pri zame-
shchenii v aromaticheskem ryadu. 1. Sul'firovaniye m-toluolsul'-
fokisloty)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 239-244
(U.S.S.R.)

ABSTRACT: It is known that the orientation of a newly incoming substitute during the displacement in a benzene ring is affected by the reactivity of the given compound and reaction condition, i. e. temperature, activity of attacking agent and time of reaction. The effect of these very factors on the orientation of a newly incoming sulfo-group was investigated during m-toluene-sulfonic acid sulfonation experiments. Instead of the anticipated 1,2,5- and 1,3,5-toluenedisulfonic acids, the authors obtained a 1,3,5-isomer (the sulfo-group is oriented in meta-position relative to the methyl group) which was found to be a kinetically highly stable isomer. The ortho-, para-orienting effect of the methyl

Card 1/2

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Orientation during Displacement in the Aromatic Series

group in toluene was seen to become weaker in m-toluenesulfonic acid as a result of the deactivation of the nucleus of the sulfo-group. Sulfonation of this acid results in the formation of a more stable meta-isomer (1,3,5-toluenedisulfonic acid). Higher temperature and activity of the sulfonating agent increase the amount of the isomer. An increase in reaction period has the same effect as temperature and activity increases. The results of sulfonation with various agents and at different temperatures are tabulated.

Six tables, 1 graph. There are 7 references, of which 2 are Slavic.

ASSOCIATION: The Ivanov Chemical-Technological Institute (Ivanovskiy Khimiko-Tekhnologicheskiy Institut)

PRESENTED BY:

SUBMITTED: January 30, 1956

AVAILABLE:

Card 2/2

LYMAR', A.N., inzh.; Prinimali uchastiye: YAKOVLEVA, T.I., kand.tekhn.nauk;
MALOVA, N.N., inzh.

Studies of the concentration of Satka magnesites. Trudy Inst.
ogneup. no.29:153-172 '60. (MIR 14:12)
(Satka—Magnesite)

GULIN, Vasiliy Mikhaylovich; POTAPOVA, Nina Nikolayevna; YAKOVIEVA,
Tat'yana Konstantinovna; IVANOV, P.P., red.; PANKRATOV, A.I.,
tekhn.red.

[Mechanization of secondary and auxiliary operations] Mekha-
nizatsiya podobno-vspomogatel'nykh rabot. Ivanovo, Ivanovskoe
knizhnoe izd-vo, 1961. 46 p. (MIRA 15:4)
(Textile industry--Equipment and supplies)

YAKOVLEVA, T. L.
KENIGSBERG, L. M. ; YAKOVLEVA, T. L.

"Picdra and Psuedopiedra."

Vestnik vererologii i dermatologii (Bulletin of Venerology Dermatology),
No 1, January-Februar 1954, (Ficmper), Moscow.

YAKOVLEVA, T.L.

USSR/Zooparasitology - Sporozoa,

P-1

Abs Jour : Referat v Zhurnal Biologii, No 16, 1957, 70106

Author : Yakovleva, T.L.

Inst : Zdravookhr. Tadzhkistana

Title : Problem of Substitution of Sarcosporidia for Toxoplasma
in the Color Test for Toxoplasmosis

Orig Pub : Zdravookhr. Tadzhkistana, 1956, No 5, 13-16

Abstract : 92 sera were studied by reaction with dye Sebin-Feldman's:
seven healthy and 85 suffered from a variety of diseases. In the latter group, five suspected of toxoplasmosis. In place of live toxoplasma, sarcosporidia were taken from heart muscles of horned cattle or from sheep. Sarcosporidia were found unsuitable for the reaction for toxoplasmosis.

Card 1/1

- 1 -

YAKOVLEVA, T. L.

USSR/Microbiology - Microorganisms Pathogenic to
Humans and Animals

F-3

Abs Jour: Ref Zhur - Biol., № 18, 1958, 81613

Author : Kenigsberg, L.M., Yakovleva, T.L.

Inst : -

Title : Tadzhikistan Piedra and Pseudopiedra.

Orig Pub: Izd. Otd. estestv. nauk AN TadzhSSR, 1957,
No. 18, 21-231

Abstract: Cases of piedra disease which differ in their
clinical picture and in the nature of the cau-
sative agent (Trichosporum) from presently
known forms of piedra: American, European,
Japanese -- were observed in Tadzhikistan.
Characteristic symptoms of different forms of
piedra, mcrphological, and cultural features
of Trichosporum variants are tabulated. The

Card 1/3

*Clinic kozhnykh bolezney
Stalinabad. Med.-Inst.*

USSR/Microbiology - Microorganisms Pathogenic to
Humans and Animals

F-3

Abs Jour: Ref Zhur - Biol., No 18, 1958, 81613

disease is found in women with long and greasy hair. In the mid-portion of the hair stony nodules appear, of a greyish color, firmly attached to the hair surface. The nodules consist of mosaically arranged spores and small granules retained in the first generation of pure culture. The spores do not penetrate inside the hair, the cuticle is undamaged at the spot of attachment, the infected hair retains its luster and sturdiness. For the first time we succeeded in infecting cut human hair by piedra by soaking it in a suspension of the fungus culture in castor oil, which had a characteristic granulosity in addition to spores and mycelium. A disease is also described clinically resembling piedra, caused by

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USSR/Microbiology - Microorganisms Pathogenic to
Humans and Animals

F-3

Abs Jour: Ref Zhur - Biol., No 18, 1958, 81613

an actinomycete and named pseudopiedra, in which
nodules of a brick-red color appear on long,
oily hair. Pseudopiedra is found in Tadzhikis-
tan, Uzbekistan, in the Urals and in the
Ukraine. Bibl. 39 refs. -- M.I. Nakhimovskaya

Card 3/3

YAKOVLEVA, T.M.

Decade c1960

See ILC

Biochemistry

YAKOVLEVA, T.M.

Phosphatases of leucocytes catalyzing the hydrolysis of various substrates at different pH values. TSitologija 2 no.2:208-218 Mr-
(MIRA 14:5)
Ap '60.

1. Laboratoriya tsitologii Instituta morfologii zhivotnykh AN SSSR,
Moskva.
(PHOSPHATES)

TSAREV, B.A.; GANDYAN, V.V.; MARTYSH, G.O.; YAKOVLEVA, T.P.

Use of polyvinyl alcohol in photographic emulsions. Trudy LIKI
no. 5:159-164 '59. (MIRA 13:12)

1. Kafedra tekhnologii proizvodstva kinofotomaterialov.
Leningradskogo instituta kinoinzhenerov.
(Photographic emulsions) (Vinyl alcohol)

SELEZNEV, A.K.; PRIGORNEV, I.G. Prinimali uchastiye: YAKOVLEVA, T.P.;
VASILEVSKAYA, Ye.Ye.

Obtaining β -chloro-ethers from unsaturated hydrocarbons of vapor-phase cracking. Izv.vys.ucheb.zav.; neft'i gaz 3 no.3:63-68 '60.
(MIRA 14:10)

1. Groznenskiy neftyanoy institut i Novogroznenskiy neftepererabatyvayushchiy zavod.
(Ethers) (Cracking process)

YAKOVLEVA, T.S.

AVIDON, D.B., kand.med.nauk; BAIROV, G.A., kand.med.nauk; BUTIKOVA, N.I., dotsent, kand.med.nauk; BOIKOV, G.A., kand.med.nauk; VERESHCHAGINA, L.N., kand.med.nauk; GONCHAROVA, M.N., prof., doktor med.nauk; ZHOLOBOV, L.K., vrach; ZEMSKAYA, A.G., kand.med.nauk; KAYSAR'YANTS, G.A., dotsent, kand.med.nauk; KOLESOV, A.P., doktor med.nauk; KONDRAT'YEV, A.P., kand.med.nauk; KORCHANOV, G.I., kand.med.nauk; KUTUSHEV, F.Kh., kand.med.nauk; LEVINA, O.Ya., kand.med.nauk; LYANDRES, Z.A., prof., doktor med.nauk; MOROZOVA, T.I., kand.med.nauk; MIRZOYEVA, I.I., kand.med.nauk; PANUSHAIN, V.S., kand.med.nauk; RASTORGUYEV, A.V., vrach; RUDAKOVA, T.A., kand.med.nauk; SAVITSKAYA, Ye.V., kand.med.nauk; SVISTUNOV, N.I., vrach; CHISTOVICH, G.V., kand.med.nauk; YAKOVLEVA, T.S., vrach; MARGORIN, Yevgeniy Mikhaylovich, prof., red.; DOLETSKIY, S.Ya., red.; VERESHCHAGINA, L.N., red.; RULEVA, M.S., tekhn.red.

[Operative surgery on children] Operativnaya khirurgiya detskogo vozrasta. Leningrad, Gos.izd-vo med.lit-ry Medgiz, Leningr.otd-nie, 1960. 475 p. (MIRA 13:12)

(CHILDREN--SURGERY)

YAKOVLEVA, T.S. (Leningrad, N-17, Yaroslavskiy pr., d.87, kv.30)

Treatment of fistulous forms of rectal and anal atresia. Vest.
khir. 89 no.11:119-125 N '62. (MIRA 16:2)

I. Iz kafedry khirurgii detakogo vozrasta (zav. - prof. G.A.
Bairov) Leningradskogo pediatricheskogo meditsinskogo instituta
(rektor - dotsent Ye.P. Semenova).
(FISTULA, ANAL) (RECTUM—ABNORMALITIES AND DEFORMITIES)
(ANUS—ABNORMALITIES AND DEFORMITIES)

LEMESHEV, M.Ya.; LAGUTIN, N.S.; GREKULOV, L.F.; KRASNOV, V.D.; FRONIN, A.A.; YAKOVLEVA, T.Y.; ANAN'YEVA, L.P.; KOLOSOVA, Ye.Ya.; MURASHKO, Yu.V.; CABIDULLIN, V.M.; POPOV, N.I.; POPOV, N.M.; STUDENKOVA, N.M.; SMYSLOVA, A.S.; PANIN, N.S., red.; PANIN, N.S., red.; GERASIMOVA, Ye.S., tekhn.red.

[Methods for creating an abundance of agricultural products in the U.S.S.R.] Puti sozdaniia izobilliia sel'skogo khoziaistvennykh produktov v SSSR. Moskva, Ekonomizdat, 1963. 317 p. (MIRA 16:6)

1. Sektor ekonomiceskikh problem sel'skogo khozyaystva Nauchno-issledovatel'skogo ekonomiceskogo instituta Gosplana SSSR (for all except Panin, N.S., Panin, N.S., Gerasimova).
(Farm produce)

YAKOVLEVA, T. V.

Volkenshtein, M. V., Nikitin, V. N. and Iakovleva, T. V. The reversible isomerism of dienes. Pages 471 - 477.

Inst. of High Molecular Compounds
Acad. of Sci. USSR.

SO: Bulletin of the Academy of Sciences, Izvestia, (USSR) Vol. 14, No. 4.
(1950) Series on Physics.

YAKOVLEVA, T. V.

Physical Chemistry

Dissertation: "Depolarization of Lines of the Raman Spectra and the Nature of the Double C-C Bond." Cand Chem Sci, Inst of High Molecular Compounds, Department of Chemical Sciences, Acad Sci USSR, Oct-Dec 1953. (Vestnik Akademii Nauk, Moscow, Mar 54)

SOP SUM 213, 20 Sept 1954

YAKOVLEVA, T. V.
USSR/Chemistry

Card 1/1

Authors : Nikitin, V. N., and Yakovleva, T. V.

Title : Studies in the Field of Reversible Isomerism. I. Spectroscopic Manifestation of Reversible Isomerism and the Method for Evaluation of Results.

Periodical : Zhur. Fiz. Khim. Vol. 28, Ed. 4, 692-696, Apr 1954

Abstract : Studies performed in the field of reversible isomerism by means of combined dispersion of oscillation spectra, and use of an infrared spectroscopy. The author also presents a method for calculating the difference in valence and entropy of reversible isomers. Two references; graphs.

Institution : Institute of High Molecular Compounds of the AS of the USSR Leningrad.

Submitted : June 26, 1953

YAKOVLEVA, T. V.

USSR/Chemistry

Card 1/1

Authors : Nikitin, V. N., and Yakovleva, T. V.

Title : Studies in the Field of Reversible Isomerism. II. Reversible Isomerism in Isoprene.

Periodical : Zhur. Fiz. Khim. Vol. 28, Ed. 4, 697-699, Apr 1954

Abstract : A study is presented on reversible isomerism in isoprene in the temperature limits from - 60 to 50°C, and a spectroscopic data on the calculation of the difference in valence and entropy of isoprene isomers. Two references; table; graphs.

Institution : Institute of High Molecular Compounds of the AS of the USSR,
Leningrad.

Submitted : June 26, 1953

YAKOVLEVA, T. V.

Distri:

4E14/4E43

27

Preparation of silver chloride plates for cells. L. D. Shcherba and T. V. Yakovleva. Primary I Tekh. Sistemata 1950, No. 3, 101. A simple method for the preparation of AgCl wafers for obtaining infrared absorption spectra is offered. AgCl was dried from AgNO₃ and then filled into 20 cc. Pyrex glass ampuls, which were placed into muffle, slowly heated to 480°, and held there for 40-50 min. Then, in the course of 1.5-2 hrs. the temp. was very slowly lowered to 120-50°. Under such conditions relatively large AgCl crystals are formed. The coated mass is removed from the glass mechanically and washed with HNO₃ and H₂O. The transparent mass is then pressed in Cr-plated molds. During 15-20 min. the pressure is gradually increased to 2000 atm. After release of pressure the mass is heat-treated at 100° for 2-3 hrs. The pressure is then slowly increased to 300 atm., held for 10-12 hrs., and gradually released. Transparency of the product is 70-80%. Av. crystal size is 0.5 mm. E. Ryshkewitch

Yakovleva, T. V.

Preparation of a low-pressure mercury-lamp, T. V. Yakovleva, Pribery i Tekhnika Experimenta 1957, No. 1, 118-19.—Fig. lamp, emission, and circuit diagram are discussed. Intensive monochromatic light is emitted with some background emission, which can only be lowered by filters with attendant loss in intensity of monochromatic emission.

A. Kremheller

YAKOVLEVVA, T.V.

Spectrum analysis of solutions HNO_3 — N_2O_4 — H_2O . Zhur. neorg. khim. 2 no.12:2782-2788 D '57. (MIRA 11:2)

1. Gosudarstvennyy institut prikladnoy khimii.
(Nitric acid—Spectra) (Nitrogen oxides—Spectra)

YAKOVLEVA, T.V.

120-3-56/40

AUTHORS: Lebedev, V.B. and Yakovleva, T.V.

TITLE: A Current Regulator for a Low Pressure Mercury Lamp.
(Regulyator toka dlya rtutnoy lampy nizkogo davleniya)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, Nr 3, p.111
(USSR)

ABSTRACT: The circuit diagram of the current regulator (20-25 A) is shown in Fig.1. The mercury lamp M is supplied by the rectifier EAPC-100-275 through the resistances R_1 and R_2 . The slide of the rheostat R_1 is shown in Fig.2. The magnitude of the current is governed by the resistance R_2 . The slide is controlled by an automatic relay scheme which moves and reverses it. At 105 V I is $\sim \pm 0.1$ A. There are 2 figures.

ASSOCIATION: Institute of Applied Chemistry (Institut prikladnoj khimii)

SUBMITTED: January 25, 1957.

AVAILABLE: Library of Congress.

Card 1/1 1. Mercury Lamps-Current-Control

AUTHORS: Vovsi, B. A., Sharanin, Yu. A., Petrov, A. A., Masliy, L. K., Yakovleva, T. V. SOV/156-58-2-33/48

TITLE: The Action of Phosphorus Pentachloride on Vinyl Acetylene and Isopropenyl Acetylene (Deystviye pyatikhloristogo fosfora na vinilatsetilen i izopropenilatsetilen)

PERIODICAL: Nauchnyye doklady vysashchey shkoly. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 2, pp. 335 - 338 (USSR)

ABSTRACT: In previous reports (Refs 1-3) it was proved that the sequence of the affiliation of various substances to the vinyl acetylene hydrocarbons depends on the structure of the latter and on the nature of the affiliated molecules. It was interesting to compare the results thus obtained to those concerning the affiliation of compounds to the vinyl acetylene hydrocarbons which react under a rupture of the P—halide-3-bond, above all of the phosphorus pentachloride. A survey of publications follows. The authors investigated the affiliation of PCl_5 to the acetylene mentioned in the title in a benzene² or CCl_4 -medium. The reaction is accompanied by a HCl-separation. In the case

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The Action of Phosphorus Pentachlorides on Vinyl
Acetylene and Isopropenyl Acetylene

SOV/156-58-2-33/48

of vinyl acetylene excess and increased temperature (35°) the reaction was limited to the chlorination of the hydrocarbon (mostly tetrachlorides were formed). At low temperature phosphoric products are formed. The latter are rather viscous oils which consolidate after longer storage. They do not contain acetylene groupings, since they do not form acetylenides with a silver oxide solution. Intensive frequencies of the double bonds (approximately 1650 cm^{-1}) occur in the infrared spectra of the adducts. Frequencies of the acetylene- and allene grouping are lacking (Fig 1). The chlorine atoms connected with phosphorus are exchanged easily with methoxyl groups in the case of a treatment with alcohol alkalis. The ether formed in this case are liquids which are easily polymerized if they are stored and heated. The analysis of the adducts showed that they contain 4 chlorine atoms two of which are connected with the carbon. The 1,3-diene character of the investigated substances made possible the determination unobjectionable of the position of one of those chlorine atoms. Several assumptions are made concerning the second. The chlorine

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The Action of Phosphorus Pentachlorides on Vinyl
Acetylene and Isopropenyl Acetylene

SOV/156-58-2-33/48

atoms are assumed to substitute to a great extent the hydrogen atoms in the group $\text{CH}_2=\text{CH}-$. This is in agreement with the fact that the mentioned substance forms in the case of ozonization considerable quantities of formaldehyde. The spectrum of the adduct which was obtained from isopropenyl acetylene is similar to the above mentioned. Thus it was explained that PCl_5 is affiliated in vinyl- and isopropenyl acetylene only to the acetylene bond. The affiliation products differ, however, from the expected chlorine anhydrides of the chlorine alkadiene phosphinic acids by the presence of an additional chlorine atom the position of which has not yet been determined. There are 1 figure, 1 table, and 8 references, which are Soviet.

ASSOCIATION: Kafedra organicheskoy khimii Leningradskogo tekhnologicheskogo instituta im. Lensoveta ((Chair of Organic Chemistry of the Leningrad Institute of Technology imeni Lensovet)

Card 3/4

The Action of Phosphorus Pentachlorides on Vinyl
Acetylene and Isopropenyl Acetylene

SOV/156-58-2-33/48

SUBMITTED: November 26, 1957

Card 4/4

PETROV, A.A.; PORFIR'YEVA, Yu.I.; YAKOVLEVA, T.V.; MINGALEVA, K.S.

Conjugated systems. Part 42: Order of addition of iodine to vinyl
acetylene hydrocarbons. Zhur.ob.khim. 28 no.9:2320-2324 S '58.
(MIRA 11:11)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta,
(Iodine) (Acetylene)

PASS, L.G.; RODIN, A.P.; SUTSKIY, A.B.; TOPOROV, P.T.; FEL'DMAN, L.S.;
VAL'DMAN, D.A.; TUKACHINSKIY, M.S.; YAKOVLEVA, T.V.; ISAKOV, V.I.,
red.; MORSKOY, K.L., red.izd-va; BOROVMEV, N.K., tekhn.red.

[Organizing machine accounting in the construction industry;
collection of articles] Organizatsiya mekhanizirovannogo ucheta
v stroitel'stve; stornik statei. Moskva, Gos.izd-vo lit-ry po
stroit., arkhit. i stroit. materialom, 1959. 171 p. (MIRA 13:3)
(Machine accounting)

SOV/51-7-2-26/34

AUTHORS: Petrov, A.A., Yakovleva, T.V. and Kormer, V.A.

TITLE: Infrared Spectra of Certain Di-Substituted Allene Hydrocarbons
(Infrakrasnyye spektry nekotorykh dvuzameshchenykh allenovykh
uglevodorodov)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 2, pp 267-271 (USSR)

ABSTRACT: The authors obtained the infrared transmission spectra of the following nine allenes:

heptadiene-2,3 (curve 1 in a figure on p 268);
nonadiene-2,3 (curve 2);
7-methyloctadiene-2,3 (curve 3);
6,6-dimethylheptadiene-2,3 (curve 4);
octadiene-3,4 (curve 5);
nonadiene-3,4 (curve 6);
7-methyloctadiene-3,4 (curve 7);
decadiene-3,4 (curve 8);
7,7-dimethyloctadiene-3,4 (curve 9).

The frequencies of the nine compounds are listed in a table on pp 269-270.
These hydrocarbons were prepared by reaction of lithium alkyls and
vinylalkylacetylenes. The spectra were recorded by means of an

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Infrared Spectra of Certain Di-Substituted Allene Hydrocarbons SOV/51-7-2-26/34

IKS-14 spectrophotometer using an NaCl prism up to 1800 cm^{-1} and an LiF prism for higher wave numbers. The samples were in the form of layers 0.03 mm thick. The most characteristic and intense bands observed in the spectra of all these hydrocarbons were the bands due to the allene group at 1960-1965 cm^{-1} and due to non-planar deformational vibrations of the group C=C=CH-- at 870-875 cm^{-1} . Other absorption bands are briefly discussed. There are 1 figure, 1 table and 4 references, 1 of which is Soviet, 1 translation from English into Russian and 2 French.

SUBMITTED: February 23, 1959.

Card 2/2

5:3100

67159

AUTHORS: Petrov, A.A., and Yakovleva, T.V.

SOV/51-7-6-20/38

TITLE: On the Hydrogen Bond in Acetylene Amines¹

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, No 6, pp 817-819 (USSR)

ABSTRACT: Hydrocarbons with an end acetylene group can readily exchange a hydrogen atom for a metal, i.e. they behave like acids (Ref 1). One would expect also that compounds with an end acetylene group might form complexes with amines. To check this the authors obtained the infrared spectra of certain tertiary acetylene amines with the following general formula: R₂N-(CH₂)_n-C≡CH (n = 1, 2 or 3). The spectra were recorded by means of an IKS-14 spectrometer with LiF and NaCl prisms. Some of them are shown in a figure on p 818 where curves 1-8 represent, respectively: dimethylaminobutyne-3, diethylaminobutyne-3, diethylaminopentyne-4, piperidinobutyne-3, piperidinopentyne-4, diethylaminobutene-1-butyne-3. The amines were prepared employing the techniques described earlier (Refs 4-6). In all cases the authors found a band characteristic of the valence vibrations of the acetylene hydrogen (3300 cm⁻¹) as well as a broad band at 3210 cm⁻¹ (cf. figure on p 818, curves 1-5). The latter band is ascribed to the valence

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4

67159

S27/524-A-21,72

On the Hydrogen Bond in Acetylene Amines

vibrations of the acetylene hydrogen forming a hydrogen bond with nitrogen of the amino group:



Displacement of the 3210 cm^{-1} band in acetylene amines (amounting to 90 cm^{-1}) is of the same order as that known to be due to hydrogen-bond formation in primary and secondary saturated amines (Ref 2). The observed displacement is larger in solutions of tertiary butyl acetylene and vinyl acetylene in triethyl amine (125 and 140 cm^{-1} respectively). Only a small proportion of the amine molecules takes part in formation of hydrogen bonds since the spectra always included an intense undisplaced band due to the valence CH-vibrations of a free group $\text{C}\equiv\text{C}-\text{H}$. Hydrogen bond formation was also observed between molecules of certain other acetylene compounds with an end acetylene group, e.g. in vinyl acetylene ketones and between molecules of amino-alcohols, such as ethanol diethylamine. No evidence of the H-bond formation was found in the spectra of propargyl aldehyde and butynone. There are 1 figure and 6 references, 4 of which are Soviet, 1 German and 1 translation.

Card 2/2

SUBMITTED: April 14, 1959

7(3); 5(4), 24(7)

SOV/48-23-10-17/33

AUTHORS: Petrov, A. A., Yakovleva, T. V.

TITLE: Infrared Spectra and the Structure of the Products of the Telomerization of Diene Hydrocarbons With Halogen Derivatives

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,
Vol 23, Nr 10, pp 1217-1218 (USSR)

ABSTRACT: The authors had already previously found that diene-hydrocarbons react easily with halogen derivatives in the presence of Sn-, Ti-, Zn-, Fe- and other metal chlorides. This results in 1,2- and 1,4 products, the structural determination of which meets with certain difficulties. For the structural determination of these telomers the authors used infrared spectra in that they determined the intensity of the bands of valence oscillations of short bonds, the corresponding deformation oscillation bands within the range $800-1000 \text{ cm}^{-1}$, and the valence oscillation bands ($=\text{C}-\text{H}$, 3030 cm^{-1} or the harmonic vibration with about 6100 cm^{-1}). In the simplest case two products of the composition $\text{C}_8\text{H}_{13}\text{Cl}$ were obtained in the telomerization of divinyl with its hydrochlorides, the structure of which could be determined

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SOV/48-23-10-17/39

Infrared Spectra and the Structure of the Products of the Telomerization of
Diene Hydrocarbons With Halogen Derivatives

as amounting to $\text{CH}_3\text{-CH=CH-CH}_2\text{-CH}_2\text{-CHCl-CH=CH}_2$ and
 $\text{CH}_3\text{-CH=CH-CH}_2\text{-CH}_2\text{-CH=CH-CH}_2\text{-Cl}$. In some cases, e.g. in the
telomerization of 2-chloropentene-3 with isoprene, piperyls, and
chloroprene, 1,4-adducts were obtained (yield 85-90%). In these,
only the - CH=CH -groups could be distinctly identified. By means
of infrared spectroscopy the problem of the practical identi-
fication of telomers produced from allyl-isomers could be
solved; also in the analysis of telomer mixtures success could
be attained by the application of this method. There are
5 Soviet references.

Card 2/2

24(7), 5(4), 7(3)

SOV/48-23-10-21/39

AUTHORS: Petrov, A. A., Yakovleva, T. V.

TITLE: The Infrared Spectra and the Structure of the Addition Compounds of Various Substances to Vinyl Acetylene Hydrocarbons

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,
Vol 23, Nr 10, pp 1226-1227 (USSR)

ABSTRACT: Petrov et al. in a number of earlier papers already dealt with investigations of addition reactions to vinyl acetylene hydrocarbons in electrophilic, nucleophilic, and radical reagents (Refs 1-8). The addition compounds were 1,3-diene-, acetylene-, and allene-compounds. They all had very characteristic bands in the infrared spectrum: 1600 cm^{-1} , 2100 or 2200 cm^{-1} and 1960 cm^{-1} . For the determination of structure, above all the valence- and deformation vibrations of the CH group were used. The addition reaction of bromine to non-substituted vinyl acetylene furnished two addition compounds: one low-boiling (1558 and 1621 cm^{-1} and 928 and 969 cm^{-1}) and one high-boiling one (1960 cm^{-1}). The structures of the two latter could be determined as being $\text{CHBr}=\text{CBr}-\text{CH}=\text{CH}_2$ and $\text{CHBr}-\text{C}=\text{CH}-\text{CH}_2\text{Br}$, a result that was confirmed by chemical methods. Also small quantities

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SOV/48-23-10-21/39

The Infrared Spectra and the Structure of the Addition Compounds of Various Substances to Vinyl Acetylene Hydrocarbons

of the third possible isomer (3300 cm^{-1}) were found, which has the structure $\text{CH}\equiv\text{C}-\text{CHBr}-\text{CH}_2\text{Br}$. The addition of bromine in vinyl-alkyl acetylene gave $\text{R}-\text{C}\equiv\text{C}-\text{CHBr}-\text{CH}_2\text{Br}$ and $\text{R}-\text{CHBr}-\text{CH}\equiv\text{C}-\text{CHBr}$. In the following some further results obtained by earlier investigations (Refs 4,6,7,8) are briefly discussed. Structures with acetylene groups at their ends may be determined with particular reliability by means of infrared spectra, because within the range of CH-valence vibrations of this group (3300 cm^{-1}) no other frequencies are found; an identification of allene compounds according to the frequency 1960 cm^{-1} is, however, very difficult. Determination of 1,3-diene compounds according to the frequencies in the range of $1640-1720\text{ cm}^{-1}$ is also difficult because in this range there lie also the compounds which are characteristic of some acetylene compounds. There are 10 Soviet references.

Card 2/2

SOV/79-29-2-20/71

AUTHORS: Petrov, A. A.; Bal'yan, Kh. V., Kheruze, Yu. I., Shvarts, Ye. Yu.,
Yakovleva, T. V.

TITLE: On the Question of the Structure of Citral, Obtained From the
Synthetic Geranyl Chloride (K voprosu o stroyenii tsitralya,
poluchennogo iz sinteticheskogo geranilkhlorida)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 2, pp 445-450 (USSR)

ABSTRACT: In connection with the systematic investigations begun in their laboratories in the field of telomerization of diene hydrocarbons with halogen derivatives (Refs 1-3), K. V. Leets, A. K. Shumeyko and collaborators achieved the synthesis of citral from isoprene (Ref 4). The question arose obviously, whether this citral differs from natural samples and especially from citral, commercially obtained from coriander oil. According to data contained in publications (Refs 5-7) natural citral chiefly consists of citral «a», geranal, whereas in synthetic citral nerol (citral «b» is predominant). By the aid of the infrared spectra of citral isomers separated from one another by some research workers (Refs 6-8), the structure of citral from isoprene is conveniently determinable, all the more as it became

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SOV/79-29-2-20/71

On the Question of the Structure of Citral, Obtained From the Synthetic Geranyl Chloride

possible also to solve the question of the content of the α and β -form simultaneously (Ref 9). Thus, investigations were extended to the infrared and ultraviolet spectra, as well as the Raman spectrum of synthetic citral, obtained from the telomers of isoprene with its hydrochlorides according to Somme. The citral samples obtained from both isomeric hydrochlorides of isoprene, were found to be practically identical. Synthetic citral differs somewhat from natural and technical citral, differences being caused by the different content of geometrical isomers (geranial and neral) and by the presence of an admixture. Synthetic citral was found to have but a small amount of α -form. There are 2 figures, 4 tables, and 14 references, 8 of which are Soviet.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensoveta
(Leningrad Technological Institute imeni Lensoveta)

SUBMITTED: December 31, 1957
Card 2/2

5 (3)

AUTHORS: Petrov, A. A., Bal'yan, Kh. V., SCV/79-29-5-37/75
Dunina-Krivorukova, L. I., Yakovleva, T. V.

TITLE: Investigations in the Field of Conjugated Systems
(Issledovaniya v oblasti sopryazhennykh sistem). XCVIII.
Telomerization of Divinyl With Crotyl Chloride and 3-Chloro-
butene-1 (XCVIII. Telomerizatsiya divinila s khloristym
krotilom i 3-khlorbutenom-1)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 5,
pp 1576-1587 (USSR)

ABSTRACT: In previous papers a certain relationship between the structure
of initial dienes and chlorine derivatives and the structure
of the resulting telomers was found (Refs 1-3). As compared
with its homologs and derivatives, divinyl was found to form
much more 1,2-adducts. In a French patent (Ref 4) it is,
however, stated that crotyl chloride and -bromide are added
to divinyl in 1,4-position. In order to explain this
contradiction, the reaction mentioned in the title was
carried out in the presence of tin chloride. The reaction
products were cleaved by distillation to give the adducts with

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Investigations in the Field of Conjugated Systems. 307/79-29-5-37/75
XCVIII. Telomerization of Divinyl With Crotyl Chloride and 3-Chloro-butene-1

the composition $C_4H_7-C_4H_6-Cl$, $C_4H_7-(C_4H_6)_2-Cl$ and higher telomers. The first-mentioned fraction was separated into the two partial fractions A and B. Fraction A primarily consisted of 3-Cl-octadiene-1,6 (1,2-addition), fraction B of 1-Cl-octadiene-2,5 (1,4-addition). The ratio of the quantities of fraction A and fraction B was 1 : 1.3. This refutes the statements of the afore-mentioned paper. Furthermore, the infrared spectra of the two fractions A and B, their reaction with urotropin, and their hydrogenation products of $Pd/CaCO_3$ were investigated. The fraction with the telomers $C_4H_7-(C_4H_6)_2-Cl$ was likewise investigated. Both products of the 1,2-addition and products of the 1,4-addition were found. The higher telomers were not investigated. Apparently, the reaction of telomerization is of ionic nature, and both allyl isomers form the same cation which exhibits a double reactivity with a more considerably pronounced electrophilic activity in position 1. By the telomerization of divinyl with allyl chloride under the same conditions only higher telomers were obtained. Figure 1 shows the individual

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Investigations in the Field of Conjugated Systems. Sov/79-29-5-37/75
XCVIII. Telomerization of Divinyl With Crotyl Chloride and 3-Chloro-butene-1

infrared spectra of telomers and their reaction products with urotropin. Figure 2 presents the infrared spectra of carbonyl compounds obtained by Somme reaction. Figure 3 shows the infrared spectra of hydrocarbons obtained by hydrogenation. Figure 4 gives the infrared spectra of telomers with the composition $C_4H_7-(C_4H_6)_2-Cl$. Table 1 presents the results of distillation of the telomers obtained with crotyl chloride and 3-chlorobutene-1. Table 2 gives the characteristic features of reaction products obtained with crotyl chloride, table 3 the characteristic frequencies of the infrared spectra. Table 4 shows the physical data of telomers obtained with crotyl chloride of the composition $C_4H_7-(C_4H_6)_2-Cl$. Table 5 contains the same for the products of telomerization with 3-chloro-butene-1, and table 6 the same for higher telomers obtained with 3-chloro-butene-1 of the composition $C_4H_7-(C_4H_6)_2-Cl$.

There are 4 figures, 6 tables, and 11 references, 5 of which are Soviet.

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Investigations in the Field of Conjugated Systems. SOV/79-29-5-37/75
XCVIII. Telomerization of Divinyl With Crotyl Chloride and 3-Chloro-butene-1

ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensoveta
(Leningrad Technological Institute imeni Lensoveta)

SUBMITTED: March 31, 1950

Card 1/4

AUTHORS:

Petrov, A. A., Yakovleva, T. V.

SOV/79-29-6-22/72

TITLE:

Investigations in the Field of Conjugated Systems (Issledovaniya v oblasti sopryazhennykh sistem). C. On the Addition Order of Bromine to the Phenyl-buteneines (C. O poryadke prisoyedineniya broma k fenilbuteninam)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 6,
pp 1878 - 1882 (USSR)

ABSTRACT:

Already earlier the authors showed that the nearest homologs of vinyl-acetylene which differ by the position of the methyl group, add the bromine in a different way. The penten-1-in-3 and the 2-methyl-buten-1-in-3 add the bromine on the double bond, the penten-3-in-1 as well as the unsubstituted vinyl acetylene on the triple bond and in the position 1,4 (Ref 1). These deviations in the addition of bromine were explained by the shifting of the electron cloud of the conjugated system under the influence of the methyl group whereat in the first two cases the double bond and in the latter cases the triple bond is activated. It was of interest to compare these data with the data of the bromine addition to the phenyl derivatives of vinyl acetylene built up by different ways. For this purpose the

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Investigations in the Field of Conjugated Systems.
C.On the Addition Order of Bromine to the Phenyl-butenines SOV/79-29-6-22/-2

addition order of the first bromine molecule to both isomeric phenyl-substituted vinyl acetylenes was determined: on 1-phenyl-buten-3-in-1 (I) and on 1-phenyl-buten-1-in-3 (II). The corresponding data were so far not available in publications, apart from the addition of two bromine molecules to the two hydrocarbons under formation of crystalline tetrabromides (Ref 2). In order to avoid the isomerization and polymerization of the dibromides by heating, they were not separated in a pure state from the solutions. The determination of the structure of the dibromides was carried out on the basis of a comparison of the infrared spectra of the hydrocarbon solutions (I) and (II) in CCl_4 with those of the solutions of the products which were brominated in the same solvent with one bromine mole only. It was previously shown (Refs 1,3) that the infrared spectra permit an exact determination of the structure of the addition products of the halogens to the vinyl-acetylene-hydrocarbons. The addition order of bromine to the isomeric phenyl-vinyl-acetylenes (I) and (II) was thus determined by means of the infrared spectroscopic method (see the figure and the table). The dipole

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Investigations in the Field of Conjugated Systems. SOV/79-29-6-22/72
C. On the Addition Order of Bromine to the Phenyl-buteneines

moments of the phenyl-vinyl-acetylenes suggest a certain shifting (Formulae I and II) of the electron cloud to the last carbon atom, under the influence of the phenyl group. There are 1 figure, 1 table, and 8 references, 5 of which are Soviet.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensoveta (Leningrad Technological Institute imeni Lensoveta)

SUBMITTED: May 31, 1958

Card 3/3

3 (5)

AUTHORS:

Petrov, A. A., Bal'yan, Kh. V.,
Kheruze, Yu. I., Yakovleva, T. V.

SOV/79-29-6-72/72

TITLE:

The Article is Open for Discussion (V poryadke diskussii).
On the Question of the Character of Chloroarylation of Vinyl
Acetylene (K voprosu o poryadke khlorarilirovaniya vinil-
atsetylена)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 2101 - 2103
(USSR)

ABSTRACT:

The data of the American patent 2657244 according to which vinyl acetylene is chloroarylated with diazo salts only on the ethylene bond (I) have been confirmed in the recently published report of A. V. Dombrovskiy (Ref 1). The exclusively claimed 1,2-affiliation of chlorine and aryl in this radical process seemed to the authors not quite probable. The frequently repeated analysis under conditions proposed by Dombrovskiy showed, that the categoric conclusion of this author with regard to the character of chloroarylation of vinyl acetylene does not correspond to reality. In every case the reaction takes place under formation of somewhat varying, but always considerable quantities of 1,4-products (20-40% of all adducts).

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The Article is Open for Discussion. On the Question SOV/79-29-6-72/72
of the Character of Chloroarylation of Vinyl Acetylene

The authors gained this conviction on the basis of the analyses of infrared spectra of the adducts. In addition to the frequencies of the acetylene group the spectra contained in the final phase an intensive frequency, which could only be attributed to the allene group of the compound (II). The chloroarylation products of the vinyl acetylene apparently contain in very small quantities also a third isomer, the 1,3-diene isomer (III), because the spectrum of the product in the range $\delta 100 \text{ cm}^{-1}$ shows a small maximum, which is characteristic of the group $\text{CH}_2=$.

According to Dombrovskiy's report phenyl-vinyl acetylene to which 20% allene chloride is admixed, is obtained at the dehydro-halogenation of chloroarylation products of the vinyl acetylene. Accordingly this allene chloride contains a much less mobile chloride atom, than the acetylene chloride (I). To produce pure phenyl-vinyl acetylene, the method of S. N. Reformatskiy (Ref 5) was used and this reaction was accompanied by a partial propargyl re-grouping and the formation of a mixture of approximately 80% (IV) and 20% (V). The chloride (VI), however, which was obtained from this mixture by the re-

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The Article is Open for Discussion. On the Question SOV/79-29-6-72/72
of the Character of Chloroacetylation of Vinyl Acetylene

action of SOCl_2 , contains a very small quantity of allene chloride. The same happens when phenyl-vinyl acetylene is obtained at the dehydro-halogenation of chlorides (VI). The data obtained are shown in the table and in the diagram. There are 1 figure and 6 references, 4 of which are Soviet.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensoveta
(Leningrad Technological Institute imeni Lensoviet)

SUBMITTED: July 16, 1958

Card 3/3
USCOMM-DC 61,208

5 (3)
AUTHORS:

Al'bitskaya, V. M., Blyakhman, Ye. N.,
Petrov, A. A., Yakovleva, T. V.

SOY/79-29-7-38/83

TITLE:

Investigations in the Field of Conjugate Systems (Issledovaniya
v oblasti sopryazhennykh sistem). CI. Oxidation of Vinyl Alkyl
Acetylenes With Benzoyl Hydroperoxide (CI. Okisleniye
vinilalkilatsetilenov gidroperekis'yu benzyla)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2278-2281 (USSR)

ABSTRACT:

In the papers of some authors (Refs 1, 2) it was shown that in
the case of oxidation of vinyl acetylene hydrocarbons with
hydroperoxides the affiliation of oxygen first takes place to
the ethylene bond under formation of acetylene monoxides only.
In the above papers only compound vinyl acetylenes or diene
hydrocarbons were used but no simple ones. The authors tried to
oxidize the vinyl ethyl- and vinyl butyl acetylene with
benzoyl hydroperoxide in the work under review. Thus it was
interesting to find that the authors had great difficulties in
experimenting the production of pure oxides of superior vinyl
alkyl acetylenes by bromhydrins, because the poor solubility of
bromhydrins in water did not permit the separation of the latter
from dibromides by means of extraction with water. In the case

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Investigations in the Field of Conjugate Systems. SOW/79-29-7-38/83
CI. Oxidation of Vinyl Alkyl Acetylenes With Benzoyl Hydroperoxide

of oxidation of both hydrocarbons acetylene oxides were obtained. The vinyl ethyl acetylene oxide was, according to its constants, nearly equal to the oxide of the same hydrocarbon which was obtained earlier by means of bromhydrin (Ref 3). To get more certainty about this infra-red spectra of both vinyl acetylene oxides were taken. The analysis of the data obtained showed that in both cases acetylene compounds exist. The spectrum of the oxide obtained by oxidation of the hydrocarbon differed from the same oxide that was obtained over bromhydrin, only by the presence of the band at 1728 cm^{-1} of mean intensity (Figure). This frequency also appears in the spectrum of the diene oxides which are obtained in the same way. On the whole the spectra of the vinyl butyl acetylene and the vinyl ethyl acetylene are similar. On the basis of the results of the spectroscopic investigation it was shown that in the case of vinyl ethyl acetylene the affiliation of oxygen at the oxidation with benzoyl hydroperoxide first and only takes place on the ethylene bond. In the case of vinyl butyl acetylene it can be said with reservation only, that this orientation predominates. There are 1 figure and 7 references,

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Investigations in the Field of Conjugate Systems. SOV/79-29-7-38/83
CI. Oxidation of Vinyl Alkyl Acetylenes With Benzoyl Hydroperoxide

4 of which are Soviet.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensoveta
(Leningrad Technological Institute imeni Lensoviet)

SUBMITTED: June 18, 1958

Card 3/3

5 (3)

AUTHORS: Petrov, A. A., Bal'yan, Kh. V.,
Bunina-Krivorukova, L. I.,
Yakovleva, T. V. SOV/79-29-8-13/81

TITLE: Investigations in the Field of Conjugate Systems. CV. Telomerization of Divinyl With the Hydrochloride of Chloroprene
(1,3-Dichlorobutene-2)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, № 8, pp 2518 - 2521
(USSR)

ABSTRACT: In their report (Ref 2) A. L. Klebanskiy, A. G. Sayadyan, and M. G. Barkhudaryan recently asserted that in telomerizing 1,3-dichlorobutene-2 with divinyl only the 1,4-adduct is obtained. To solve this problem, the telomerization of 1,3-dichlorobutene-2 with divinyl under standard conditions in the presence of tin chloride (Refs 3-6) was carried out by the authors in the present paper. The results are in direct contradiction to those obtained by Klebanskiy and collaborators. The telomerization products of the composition $C_8H_{12}Cl_2$ boiled higher by 20-25° at 10 mm Hg than those mentioned by Klebanskiy. Two fractions of almost equal quantities were obtained by dis-

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Investigations in the Field of Conjugate Systems. Sov/79-29-8-13/81
CV. Telomerization of Divinyl With the Hydrochloride
of Chloroprene (1,3-Dichlorobutene-2)

tillation the first predominantly containing the 1,2-adduct (3,7-dichlorooctadiene-1,6), and the second predominantly the 1,4-adduct (1,7-dichlorooctadiene-2,6). From both fractions the same aldehyde, 7-chlorooctadiene-2,6-al, was obtained according to the spectrum and melting point of the 2,4-dinitrophenyl hydrazone by way of the Sommle reaction. In the infrared spectrum of this aldehyde one intense frequency corresponds to the carbonyl group and two frequencies to the grouping - CH = CH -. According to the spectrum, the distillation residue of both fractions appears to be a 1,2-product which is practically free of the 1,4-adduct, but contains impurities of carbonyl compounds. From the hydrogenation of the entire adduct $C_8H_{12}Cl_2$ over $Pd/CaCO_3$, the n-octane resulted which was identified. Thus, it was shown that in contrast to data by Klebanskiy and collaborators, 1,3-dichlorobutene-2 as well as crotyl chloride adds to divinyl, i.e. to the positions 1,2 and 1,4. No significant differences exist between the adducts $C_8H_{12}C_2$ and

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Investigations in the Field of Conjugate Systems. SOV/79-29-8-13/81
CV. Telomerization of Divinyl With the Hydrochloride
of Chloroprene (1,3-Dichlorobutene-2)

the higher telomers. The product obtained by Klebanskiy and
collaborators corresponds to that obtained by the authors
exactly according to their instructions, however, its yield
is considerably smaller than that mentioned in their report.
Besides, a carbonyl compound is admixed to this product, prob-
ably a ketone as a result of a hydrolytic cleavage of the
chlorine atom from the double bond. There are 1 figure and
9 references, 8 of which are Soviet.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensoveta
(Leningrad Institute of Technology imeni Lensoveta)

SUBMITTED: July 16, 1958

Card 3/3

SMIRNOVA, M.N.; YAKOVLEVA, T.V.

Possibility of establishing causes of ablation of rock from magnetic susceptibility as in the case of the Maikop series in the northeastern portion of Ciscaucasia. Trudy GNI no.21:120-126 '59. (MIRA 14:5)
(Caucasus, Northern—Geology, Structural)
(Rocks—Magnetic properties)

S/079/60/030/04/22/080
B001/B016

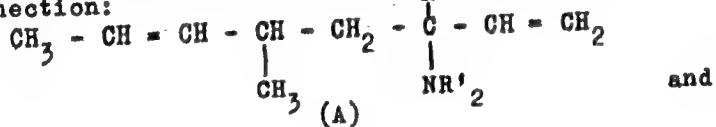
5.3610

AUTHORS: Petrov, A. A., Razumova, N. A., Genusov, M. L., Yakovleva, T.

TITLE: Exchange Reactions of Telomers of Diene Hydrocarbons Containing Chlorine. I. Reactions Between Some Low Telomers of Diene Hydrocarbons and Amines

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 4, pp. 1160-1165

TEXT: In continuation of the papers by the authors of the present paper (Ref. 1) and the papers of Ref. 2, it was of interest to allow the adducts of 2-chloro pentene-3 to dienes which may also be regarded as allyl halogen derivatives to react with nucleophilic reagents, especially with the primary and secondary amines. Two types of compounds with different position of the double bonds (A and B) may be expected to be formed in this connection:

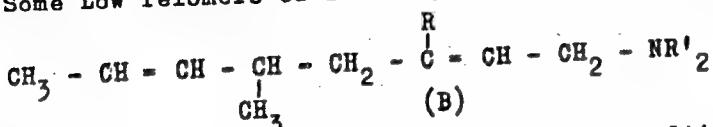


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3073

S/079/60/030/04/22/080
B001/B016

Exchange Reactions of Telomers of Diene Hydro-
carbons Containing Chlorine. I. Reactions Between
Some Low Telomers of Diene Hydrocarbons and Amines



In order to investigate the character of multiple bonds in the molecules of telomers, the infrared spectra were used, as previously. Thus, the vinyl group (isomer A) and the double bond in the compounds of the second type - CH = CH - (isomer B) were detected by the spectrometric method. Diethyl amine, dibutyl amine, butyl amine, and 4 telomers of 2-chloro pentene-3 with divinyl, isoprene, piperylene, and chloroprene were used. On telomerization of 2-chloro pentene-3 with divinyl, two possible isomers (I and II) resulted in nearly equal yield. The investigations showed that these allyl isomers form the same reaction products of the B type with secondary amines. It could be seen from the infrared spectra that the reaction with the isomer (I) takes place with rearrangement, that with isomer (II) without. The addition of 2-chloro pentene-3 to isoprene, piperylene, and chloroprene takes place mainly in the 1,4-position under formation of geranyl chloride analogs (Formula III). All these telomers gave, with secondary amines, only products of the B type (constants and formulas are

Card 2/3

Soviet

Exchange Reactions of Telomers of Diene Hydro- S/079/60/030/04/22/080
carbons Containing Chlorine, I. Reactions Between B001/B016
Some Low Telomers of Diene Hydrocarbons and Amines

given in the table). It was thus confirmed that the adducts of 2-chloro pentene-3 with diene hydrocarbons yield amines of the crotyl type B in the exchange reaction with secondary amines, irrespective of the structure. The reaction with primary amines takes place, in some cases, under formation of both allyl isomers. 12 amines of the type $C_nH_{2n-1}N$ were separated and characterized. There are 2 figures, 1 table, and 2 references, 1 of which is Soviet.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensoveta
(Leningrad Institute of Technology imeni Lensoviet)

SUBMITTED: March 11, 1959

Card 3/3

80701

3/079/60/030/05/09/074
B005/B002

5.3200

AUTHORS:

Petrov, A. A., Porfir'yeva, Yu. I., Yakovleva, T. V.

TITLE:

Investigations in the Field of Conjugate Systems. CXVII. On
the Problem of the Direction of the Addition of Halogens to
Vinyl Acetylene Hydrocarbons

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1441-1444

TEXT: The authors of the present paper describe their investigations concerning the addition of chlorine and iodine bromide to vinyl acetylene and vinyl ethyl acetylene. Iodine bromide lies between bromine and iodine as to its reactivity and has a dipole moment of 0.4 Debye (Ref. 5). The structures of the addition products were determined by analyzing their infrared spectra. On the addition of chlorine to vinyl acetylene there occurs a mixture of allene- and acetylene derivative with a low percentage of dichloride of butadiene. Chlorine therefore behaves in much the same way as bromine in the reaction with vinyl acetylene, the only difference being in that a larger amount of 3,4-addition product and a smaller amount of 1,2-addition product are obtained on a chlorine addition

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20703

Investigations in the Field of Conjugate
Systems. CXVII. On the Problem of the Direction
of the Addition of Halogens to Vinyl Acetylene
Hydrocarbons

S/079/60/030/05/09/074
B005/B002

than would be the case with bromine addition. The main product to result on the chlorination of vinyl ethyl acetylene is the acetylene derivative with a very small admixture of 1,3-diene derivative. Thus, chlorine behaves here in much the same way as bromine. Unlike chlorine, iodine bromide is preferably added to the triple bond in both hydrocarbons under investigation. Addition to the double bond occurs to a small extent, while the corresponding allene derivatives are formed in an inconsiderable amount. Therefore, iodine bromide behaves in much the same way as iodine on the addition. The procedures followed in the investigations are described in an experimental part. Yields, boiling points, densities, and refractive indices of the dihalide mixtures obtained are specified along with the elementary per cent analyses. The characteristic frequencies of the infrared spectra of the mixtures obtained are specified as well. In all cases, the dihalides were isolated by the vacuum distillation of the reaction products, since large amounts of high-boiling higher halides were also obtained on halogenization. To eliminate the possibility of an error due to an isomerization of the reaction

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30701

Investigations in the Field of Conjugate Systems. CXVII. On the Problem of the Direction of the Addition of Halogens to Vinyl Acetylene Hydrocarbons

S/079/60/030/05/09/074
B005/B002

products during distillation, the infrared spectra of the crude reaction products were investigated as well. In all cases, these spectra contained the characteristic bands of such dihalides as were afterwards isolated from the mixtures. A figure shows the infrared spectra of the 4 mixtures of dihalogen hydrocarbons obtained. There are 1 figure and 7 Soviet references.

✓

ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensoveta
(Leningrad Institute of Technology imeni Lensoviet)

SUBMITTED: April 22, 1959

Card 3/3

5,3200
AUTHORS:

TITLE:

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1445-1450
TEXT: By way of introduction the authors offer a brief survey of publications concerning the rules governing the addition of bromine to vinyl acetylene hydrocarbons (Refs. 1-4) and to derivatives of bromine to vinyl hydrocarbons (Refs. 5, 6). In the paper under review, they describe the results of their investigations on the following direction of bromination of vinyl acetylene ketones (I) and (II):
 $\text{CH}_3\text{-CO-CH-CH-C}\equiv\text{CH}$ (I) R-CO-C=CH-CH₂ (II)
(IIa) R-CH₃; (IIb) R-C₂H₅; (IIc) R-n-C₃H₇.

35112
S/079/60/030/05/10/074
B005/B002

APPROVED FOR RELEASE 1/4

Investigations in the Field of Conjugate Systems. CXVIII. On the Direction of the Addition of Bromine to Vinyl Acetylene Ketones

80702
S/079/60/030/05/10/074
B005/B002

The structures of the addition products were defined by the analysis of their infrared spectra. Spectroscopic measurements were made on a spectrophotometer of type MKC-14 (IKS-14). The characteristic frequencies of the two compound types (I) and (II) are given. To determine the direction of the bromine addition to the ketones mentioned, the infrared spectra of the solutions of these ketones in carbon tetrachloride were compared with the spectra of solutions of bromination products in the same solvent. Since the bromides were not isolated from the reaction mixtures, the results supplied refer to the original products of bromination. On the bromination of ketone (I) with the equimolar amount of bromine, this is preferably added to the triple bond. At the same time there also occurs an addition to the double bond, giving rise to a non-conjugate system. The 1,4-addition to the double bond, does not occur which is characteristic of the respective hydrocarbon, does not occur in the case of the ketone. On the bromination of ketones (IIa), (IIb), and (IIc), the addition to the triple bond and the addition to the double bond proceed together. A 1,4-addition does not occur here either. The dibromides of ketone (I) could not be isolated, since a decomposition took place on distillation of the

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Investigations in the Field of Conjugate Systems. CXVIII. On the Direction of the Addition of Bromine to Vinyl Acetylene Ketones

S/079/60/030/05/10/074
B005/B002

reaction mixture. The dibromides of ketone (IIa) were isolated from the reaction mixture. The analysis of their infrared spectrum, shown in Fig. 4, confirmed the above statement concerning the direction of bromine addition. It may be stated in conclusion that vinyl acetylene ketones add bromine to a considerably less selective extent than the respective hydrocarbons. Another characteristic feature is the complete absence of 1,4-addition, as well as the relatively high reaction rate of bromine addition. The otherwise low reactivity of the triple bond is increased by the carbonyl group. It proceeds therefrom that the addition of bromine to the ketones mentioned is probably a nucleophilic reaction (cf. also Refs. 9-11). An experimental part contains data on production, along with main physical data and the characteristic infrared frequencies of the 4 ketones investigated. The reaction conditions in bromination and the physical data of the isolated mixture of the dibromides of the ketone (IIa) are specified as well. Figs. 2 and 3 show the infrared spectra of the 4 ketones investigated and the products of their bromination. There are 4 figures and 13 references: 9 Soviet, 2 English, and 2 German.

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30702

Investigations in the Field of Conjugate Systems. CXVIII. On the Direction of the Addition of Bromine to Vinyl Acetylene Ketones

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B005/B002

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ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensoveta
(Leningrad Institute of Technology imeni Lensoveta)

SUBMITTED: May 25, 1959

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S/079/60/030/007/030/039/XX
B001/B066

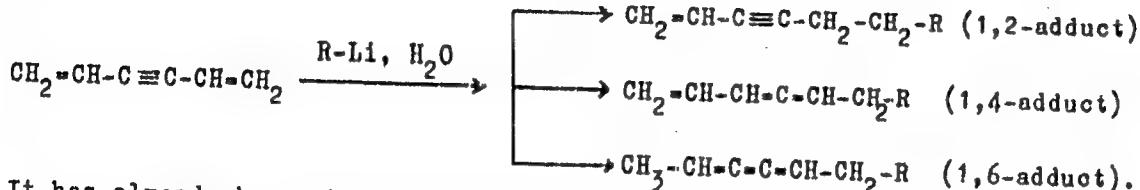
AUTHORS: Petrov, A. A., Kormer, V. A., and Yakovleva, T. V.
TITLE: Investigations in the Field of Conjugate Systems. CXX. Addi-
tion of Lithium Alkyls to Vinyl Isopropenyl Acetylene 1
PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7, pp. 2238-2243

TEXT: The authors stated in Ref. 1 that lithium alkyls readily add to vinyl alkyl acetylenes, and that symmetrically bisubstituted allenes (1,4-bond) are formed after treating the reaction mass with water. Telomerization does not take place at low temperatures. It was of interest to determine the mode of addition of lithium alkyls to hydrocarbons with a longer chain of conjugate multiple bonds, in particular to diene hydrocarbons. Here, the formation of 1,2-, 1,4-, and 1,6 adducts was to be expected since the addition to the central carbon atoms of the conjugate system seems unlikely and has not been observed as yet (Ref. 2):

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Investigations in the Field of Conjugate Systems.CXX. Addition of Lithium Alkyls to Vinyl Isopropenyl Acetylene

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B001/B066



It has already been shown that the addition of lithium alkyls to divinyl acetylene takes place in the 1,4-position to give vinyl allene hydrocarbons (Ref. 3). The structures of the latter were confirmed by their infrared spectra (absorption bands of the vinyl group and of the allene system without those of the acetylene group), and by exhaustive hydrogenation. In the present paper, the addition of lithium to vinyl isopropenyl acetylene was studied. Due to its unsymmetrical structure, the addition may take place in this case to the vinyl or isopropenyl group to give compounds (I) and (II). On the strength of the considerations of Refs. 4 and 5, the addition of radicals to the vinyl group had to be expected as this group had lost electrons. The same mode of addition was predicted owing to the radical character of the reaction course, since radical processes are

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Investigations in the Field of Conjugate Systems. CXX. Addition of Lithium Alkyls to Vinyl Isopropenyl Acetylene

S/079/60/030/007/030/039/XX
B001/B066

very sensitive to steric factors. Actually, this addition took place nearly exclusively to the vinyl group. There are no frequencies of the vinyl group in the infrared spectra of the hydrocarbons obtained from vinyl isopropenyl acetylene by addition of the lithium alkyls; the frequency of the isopropenyl group, however, was visible (Diagram 1). Consequently, the hydrocarbons have structure (II) and are isopropenyl allenes. Ozonization of the adducts confirmed this structure. The isopropenyl allenes are colorless liquids of unpleasan' odor, which turn yellow on prolonged standing. The infrared spectra of vinyl and isopropenyl allene hydrocarbons showed some peculiarities. There are 2 figures, 1 table, and 8 Soviet references.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensoveta
(Leningrad Technological Institute imeni Lensovet)

SUBMITTED: July 16, 1959

Card 3/3

YAKOVLEVA, T.V.

Vol. 20

S/07260/030/070/070/270
2001/06

AUTHORS:

Nikolaev, D. I. and Yakovleva, T. V.
Concise, I. A. and Yakovleva, T. V.
 Representation of Saturated Compounds in the Presence of the
 Catalyst Platinum, Pt, on Particularities of the
 Hydrogenation of Unsaturated Alkenes. Approximation
 Hydrogenation of Branched Alkenes. Approximation

PERIODICAL: Journal of Catalysis, 1960, Vol. 36, No. 10.
 pp. 347 - 355

TEXT: There are only few data available in publications concerning hydrogenation of unsaturated alkenes with a noble metal catalyst. In the present paper, the authors study some values of hydrogenation of the following branched alkenes: hydrocarbons with methyl, ethyl, isopropyl, isobutyl, tert-butyl, octyl, decyl, etc., and also with phenyl, naphthyl, vinyl, allyl, benzyl, etc. It was found that the rate of hydrogenation above them varies according to an increasing rate, after which hydrogenation slows down again (Diagram 1). In hydrogenations of isooctane this rule

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exists, though still more distinctly. The hydrogenation of alkenes with phenyl, allyl, and vinyl taking up half of the calculated hydrogen quantity, alkenes with a double bond position 2-3, or 4-5, or 6-7 from methyl-alkenes hydrogenation starts completely. Hydrocarbons with phenyl, naphthyl, vinyl, allyl, benzyl, etc., are hydrogenated at a higher rate. In the case, when alkene contains two double bonds in the same, very active, hydrogen and hydrocarbons having a double bond in the same, hydrogen rapidly. Alkenes and hydrocarbons having a double bond after and position changing sharply, the inferred square of the hydrogen taking up the first hydrogen with 50% of the hydrogen quantity and not evolution products of alkenes with 50% of the hydrogen quantity. Diagram 1 does not show any indications of allene compounds (Diagram 2). Diagram 1 does not show any characteristic differences of the hydrogenation rates of hydrocarbons. Diagram 3 shows curves for the hydrogenation rates of branched alkenes. Diagram 4 shows the infrared spectra of the hydrogenation products of branched alkenes in a hydrogen/oxygen ratio of 1:1.

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The investigation results thus indicate that the hydrogenation of hydrocarbon alkenes takes place selectively, and is similar to the hydrogenation of acetonyl alkenes; the acetoxy group in the case has no influence on the hydrogenation rate. This is probably due to certain effect on the hydrocarbon structure. There are 4 figures, 2 tables, and 9 Soviet references.

ASSOCIATION:

(Chemical Technological Institute imeni Lensova)

SUMMARY:
 October 26, 1959

card 18

24819
S/081/61/000/011/C15/040
B105/B203

53400

AUTHORS: Kupin, B. S., Petrov, A. A., Yakovleva, T. V., Maslennikova,
A. G.

TITLE: Direction of hydration of asymmetrical disubstituted acetylenes

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 11, 1961, 178-179.
abstract 11#48 (Tr. Leningr. tekhnol. in-ta im. Lensoveta,
1960, vyp. 60, 63-69)

TEXT: The authors studied the addition of water under the conditions of Kucherov's reaction on $\text{CH}_3\text{C} \rightleftharpoons \text{CR}$ (I), where (a) $\text{R} = \text{C}_2\text{H}_5$, (b) $\text{R} = \text{C}_3\text{H}_7$,.. (c) $\text{R} = (\text{CH}_3)_2\text{CH}$, (d) $\text{R} = (\text{CH}_3)_3\text{C}$. A noticeable orienting effect is only observed in case (I d) (65% ethyl-tert.-butyl ketone and 35% methyl neopentyl ketone). The other hydrocarbons give mixtures of all possible ketones at about equal ratios. The ketone mixtures were analyzed by comparing their infrared spectra with spectra of mixtures of known composition. The maximum error of this method is ~2-3%. It was found that the order of addition of water to disubstituted acetylenes is determined by

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B105/B203

Direction of hydration of asymmetrical ...

at least two factors acting in opposite directions: by the polarization due to σ,π -coupling of the acetylene bond and due to induction polarization. The effect of steric factors is possible. (I a) was obtained by the effect of NaNH_2 and, afterwards, of the ethyl bromide on $\text{CH}_3\text{C}\equiv\text{CH}$ in liquid NH_3 . A mixture of 12 g of (I a), 4 g of HgO , 5 g of $\text{Fe}_2(\text{SO}_4)_3$, and 250 ml of 10% H_2SO_4 was stirred for 5 hr, saturated with $(\text{NH}_4)_2\text{SO}_4$, and 8.2 g of the ketone mixture was obtained (boiling point 101-101.5°C, $n^{20}_{\text{D}} 1.3920$, $d_4^{20} 0.8096$). By means of hydration of (I b) (20 g) (obtained from $\text{C}_3\text{H}_7\text{C}\equiv\text{CNa}$ and CH_3Br in liquid NH_3), 15 g of ketone mixture were obtained (boiling point 123.5-124.5°C, $n^{20}_{\text{D}} 1.4020$, $d_4^{20} 0.8133$). The hydration of 5 g of (I c) (synthesized from CH_3I and $(\text{CH}_3)_2\text{CH}-\text{C}\equiv\text{CH}$, the latter obtained from $(\text{CH}_3)_2\text{CHCH}_2\text{CHO}$ by action of PCl_5 with subsequent separation of HCl by means of alcoholic alkali solution at 140-150°C) yields 2.8 g of ketone mixture (boiling point 114-115°C, $n^{20}_{\text{D}} 1.3972$, $d_4^{20} 0.8020$). To the solution of

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B105/B203

Direction of hydration of asymmetrical ...

4.5 g of HgO in 260 ml of 14% H_2SO_4 , 11 g of (I d) (obtained from tert.-butyl acetylene) were added at 60°C; 7.5 g of the ketone mixture were obtained after 6 hr (boiling point 124-125°C, $n^{20}D$ 1.4057, d_4^{20} 0.8405). The R structure affects the order of addition of water; in the series C_6H_5 , $CH(CH_3)_2$, and $C(CH_3)_3$, a change in the order of addition is not observed in the same direction. [Abstracter's note: Complete translation.]

X

Card 3/3

S/051/61/010/001/014/017
E201/E491

AUTHORS: Yakovleva, T.V., Maslennikova, A.G. and Petrov, A.A.
TITLE: The Effect of the Nature of the Solvent on the Profile
of the Carbonyl-Group Band in the Infrared Spectra of
Carbonyl Compounds

PERIODICAL: Optika i spektroskopiya, 1961, Vol.10, No.1, pp.131-133

TEXT: The band representing the valence vibrations of the carbonyl group in the infrared and Raman spectra is known to consist of at least two components (Ref. 1 to 6). The splitting of the band is most likely due to association. It was found that solvents can be divided into three groups depending on the nature of their effect on the carbonyl-group band profile. Solvents of the first type (polar compounds, nitromethane, chloroform, alcohols, toluene) produce only one carbonyl-band component (the one with the lower frequency) in dilute solutions. In solvents of the second type (carbon tetrachloride, hydrogen sulphide, benzene) both components of the carbonyl band can be seen. In solvents of the third type (non-polar compounds such as hexane, octane, cyclohexane) only the component with the higher

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S/051/61/010/001/014/017
E201/E491

The Effect of the Nature of the Solvent on the Profile of the
Carbonyl-Group Band in the Infrared Spectra of Carbonyl Compounds

frequency appears in the spectra. This is illustrated in Table 1 and in a figure on p.131 for acetone, methyl ethyl ketone, methyl propyl ketone, diethyl ketone, pinacolin, cyclohexanone, acetophenone and benzophenone dissolved in various solvents. The change in the solution concentration with simultaneous proportional change of the layer thickness (so that the same number of molecules remained in the ray path) did not affect the carbonyl band profile (Table 2). There are 1 figure, 2 tables and 14 references: ✓
2 Soviet and 12 non-Soviet.

SUBMITTED: April 12, 1960

Card 2/2

55310 2209

32045

S/051/61/011/005/005/018
E202/E192

AUTHORS: Yakovleva, T.Y., Petrov, A.A., and Standnichuk, M.D.

TITLE: Vibrational spectra and structure of the enyne type
silicon hydrocarbons

PERIODICAL: Optika i spektroskopiya, v.11, no.5, 1961, 588-593

TEXT: Vibrational spectra of the following were studied:
1-trimethylsilylbutene-3-yne-1; 1-trimethylsilyl-3-methylbutene-
3-yne; 1-trimethylsilyl-pentene-3-yne-1; and 1-trimethylsilyl-
2-cyclohexene-1-yl-ethyne. These were contrasted with the
available data on the corresponding enyne type hydrocarbons.
Full data of the Raman and IR vibrational spectra are given for
all the above compounds. It is concluded that the substitution
of C with Si, at the triple bond causes a sharp lowering of the
frequency in both spectra at ca. 75 cm^{-1} , and increases the
corresponding intensity of the band in the IR spectrum. The
frequency of the double bond remains substantially unchanged.
Two additional bands identified as the cis and trans isomers were
found in the first compound. The degree of depolarisation of the
lines of valency vibrations $\text{C} \equiv \text{C}$; $\text{C} = \text{C}$; and $\text{Si} - \text{C}$, with

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32045
Vibrational spectra and structure ... S/051/61/011/005/005/018
E202/E192

reference to the ellipsoid of polarisation was also investigated. It was shown that with the elongation of the C-chain of the silicon hydrocarbon, the ellipsoid is stretched, while when the branching occurs it shrinks. Cyclisation, on the other hand, has similar effect as the elongation of the straight chain. Finally, the authors conclude that the above mentioned frequency fall in the triple bond spectrum is due not only to the change of the mass of the nearest atom, but also due to the increased coefficient of elasticity.

There are 1 figure, 3 tables and 7 references; all Soviet-bloc.

SUBMITTED: December 26, 1960

Card 2/2

YAKOVLEVA, T.V.; PETROV, A.A.

Depolarization of multiple bond lines in Raman spectra of
vinyl-acetylene hydrocarbons. Opt. i spektr. 11 no.5:594-
597 N '61. (Hydrocarbons-Spectra) (MIRA 14:10)

BAL'YAN, Kh.V.; PETROV, A.A.; BOROVKOVA, N.A.; KORMER, V.A.; YAKOVLEVA, T.V.

Hydrogenation of unsaturated compounds in the presence of colloidal palladium. Part 14: Some characteristics of the hydrogenation of disubstituted allene hydrocarbons. Zhur. ob. khim. 30 no.10:3247-3253 O '61. (MIRA 14:4)

1. Leningradskiy tekhnologicheskiy institut im. Lensoveta.
(Hydrogenation) (Olefins)

S/051/62/012/002/005/020
E202/E192

AUTHORS: Yakovleva, T.V., Petrov, A.A., and Zavgorodniy, V.S.

TITLE: Vibrational spectra and structure of enine
tin-hydrocarbons

PERIODICAL: Optika i spektroskopiya, v.12, no.2, 1962, 200-203

TEXT: Raman and infra red spectra of trimethyl (vinylethynyl) tin, triethyl (vinylethynyl) tin and triethyl (isopropenylethynyl) tin, were studied in order to find the effect of the increased atomic weight of the heteroatom. All the characteristic groups and bonds were identified in terms of their frequencies. On the basis of the present and earlier work in which similar enine silicon hydrocarbons were studied (Ref.1: T.V. Yakovleva, A.A. Petrov, Opt. i spektr. v.11, 594, 1961. Ref.2: T.V. Yakovleva, A.A. Petrov, M.D. Stadnichuk, Opt. i spektr. v.11, 588, 1961) it was concluded that by exchanging the C- atom with Si, and Sn, in turn, the triple bond frequency of the tin-hydrocarbons is reduced by 20 cm^{-1} in comparison with silicon hydrocarbons, and by 90 cm^{-1} when

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Vibrational spectra and

S/051/62/012/002/005/020
E202/E192

compared with the pure hydrocarbons. The frequency of the double bond was also slightly lowered. On the other hand the intensity of the triple bond was increased which was due to the change in polarity, coefficient of bond elasticity and the stretching of the electron cloud of this bond. It was thought that some electrons of the triple bond may be partially occupying the unfilled levels of tin atom. No experimental details were given as these were the same as in the previous papers. The measurement of dipole moments was carried out by K.S. Mingaleva.

There are 2 figures and 3 tables.

SUBMITTED: January 24, 1961

Card 2/2

PETROV, A.A.; YAKOVLEVA, T.V.; KUPIN, B.S.

2,3,5-Trimethyl-1-hexen-3-yne. Zhur. ob. khim. 33 no.5:1701-
1702 My '63. (MIRA 16:6)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Hexenyne)